

REMARKS

The last Office Action has been carefully considered.

It is noted that claim 2 is rejected under 35 U.S.C. 112.

Claim 2 is also rejected under 35 U.S.C. 103 over the patent to Corci in view of the patent to Wigal.

After carefully considering the Examiner's grounds for the rejection of the claims, applicants canceled claim 2 and submitted a new independent claim 3, as well as claim 4 which depends on claim 3.

It is respectfully submitted that the new features of the present invention which are now defined in claim 3 are not disclosed in the references and can not be derived from it as a matter of obviousness.

First of all it is respectfully submitted that claim 3 has been drafted in compliance with the Examiner's comments and his formal rejection of the claims under 35 U.S.C. 112. The Examiner indicated that no drawings have been submitted. However, the Examiner' attention is respectfully directed to the fact that with the present application a copy of the PCT

application was submitted with original drawings of Figures 1-5, and additionally the same drawings were submitted as Figures 1-5 in the present application with the translation of the Russian term into the English term "fig" on each figure of the drawings. Also, in the Brief Description of the Drawings section of the application, the drawings of Figures 1-5 have been referred to.

Turning now to the references and in particular to the patent to Corci, it is respectfully submitted that this reference discloses a convertible aircraft for a vertical takeoff and landing (VTOL). In the modes of taking off and landing of this aircraft the lift is generated by a rotatable wing 10 and blades 24 located at the ends of the wing 10.

U.S. patents to Wigal discloses an aircraft having air blast powered lifting rotor for generating a lift and identified with reference numeral 51, without a counteraction of the torque onto the body of the aircraft. For this purpose the rotor 51 is blown by means of four fan units 55 and 57, with each pair of the fan units rotatable in opposite directions relative to one another, to prevent generation of a reactive moment. Therefore in this patent each pair of the fans 55 and 57 rotates in opposite directions one relative to the other, and not in opposite direction with respect to the direction of rotation of the rotor 51.

The main feature of the present invention is that the aerodynamic surfaces 1 perform actually a rectilinear or straight movement, without rotation relative to air), since during such rectilinear or straight movement the aerodynamic forces are equal in any point of the aerodynamic surface, and therefore are not alternating as on the blades of the apparatuses disclosed in both above analyzed patents. This provides for a high efficiency of producing a lift in the applicant's invention.

In order to impart to the aerodynamic surfaces 1 a rectilinear near or straight movement, they are moved along a circle 2 relative to a movement axis 4 in a direction identified with arrow 3, and simultaneously each aerodynamic surface 1 is rotated in a direction identified with arrow 5 which is opposite to the direction of the movement relative to the axis 6 of each aerodynamic surface, which is opposite to the direction of movement around the axis 4 along the circle 2, wherein an angular velocity of the rotation of each aerodynamic surface 1 is equal to the angular velocity of the movement of the aerodynamic surfaces along the circle 2. With these velocities of all points of the aerodynamic surfaces 1 are equal, and for each aerodynamic surface 1 the velocity is tangent to the circle 2 of their joint movement.

Therefore the aerodynamic surfaces 1 move rectilinearly or straight (since all points of the aerodynamic surfaces 1 have the velocity) along the circle 2 (since each aerodynamic surface 1 is tangent to the circle 2).

In order to produce a lift of the aerodynamic surfaces 1 which move in this way, they have to be tilted or deviated by a certain positive angle in a plane which is tangent to the circle 2 of their joint movement. In this case, their common aerodynamic resistance which is average per revolution along the circle 2 becomes equal zero, and no force in a horizontal plane is generated.

For producing a horizontal thrust it is necessary to provide non-zero aerodynamic resistance averaged per revolution, of the aerodynamic surfaces which move this way. This is achieved by changing the angle of deviation of the aerodynamic surfaces 1 during one revolution, or in other words by oscillations of the surfaces, as proposed in the present invention and defined in claim 3.

It is therefore believed to be clear that the proposed method is different from the methods of producing a lift and a horizontal thrust disclosed in the two references applied by the Examiner.

Figures 1-3 show a diagram of all movements of the aerodynamic surfaces 1 in accordance with the present invention. It can be clearly seen that in the known methods disclosed in the references there is no generation of rectilinear movement of the aerodynamic surfaces and oscillations simultaneous with the rotation relative to the two axes which are perpendicular to one another.

Figures 4 and 5 show an example of a device, by means of which it is possible to provide the movements of the aerodynamic surfaces in accordance with the inventive method.

The frame 12 together with the aerodynamic surfaces 1 moves along the circle relative to the axis 4 of movement by means of a drive with stars and a chain. Simultaneously, each of the aerodynamic surfaces 1, simultaneously with the movement along the circle, rotates in an opposite direction relative to the axis 6 which is parallel to the axis 4, with an angle of velocity equal to the angle of velocity of the movement along the circle. This is performed in the following manner:

The rotation from the engine (not shown in the drawings) is transmitted through the star (not shown in the drawings), which is mounted on the immovable axis 4 of movement and connected with the engine, while

the chain 13 transmits movement to another star mounted on the axis of rotation. The rotation of each aerodynamic surface 1 simultaneously with movement along the circle and with the equal angular velocities is provided by a selection of corresponding mechanical transmissions (stars and chains), which provide movement along the circle and a rotation of the aerodynamic surfaces 1. By means of a mechanical copying mechanism each aerodynamic surface simultaneously with the rotation, performs oscillations relative to two axes which are perpendicular relative to one another and are located in the planes which are perpendicular relative to one another and intersect one another along the axis of rotation of the aerodynamic surfaces 1, while one of the planes extends through the axis of movement 4 and the axis of rotation 6. During rotation of the axes 6 of rotation and the aerodynamic surfaces 1, the shaped disk 14 rotates and the pushers 14 slide along the shaped disk 14 and oscillates the aerodynamic surfaces 1 over certain angles, so as to provide a horizontal thrust simultaneously with providing a lift force.

The oscillations of the aerodynamic surfaces 1 perform simultaneously with the rotation is provided by a selection of the parameters of the mechanical copying mechanism.

The above presented information is repeated again for the purpose of clarification of how the inventive method is performed. All above mentioned elements of a system which performs the inventive method and the steps of the inventive method are disclosed in the original specification.

In connection with this, the Examiner is respectfully requested to withdraw the rejection under 35 U.S.C. 112 in the present application.

As for the Examiner's rejection of the claims over the art, it is believed to be clear that the present invention as now defined in claim 3 is not disclosed in the references and can not be derived from them as a matter of obviousness.

In order to arrive at the applicant's invention from the combination of the references, it is necessary to modify the references by including into them the features which were first proposed by the applicants. However, it is known that in order to arrive at a claimed invention, by modifying the references the cited art must itself contain a suggestion for such a modification.

This principle has also been consistently upheld by the U.S. Court of Customs and Patent Appeals which, for example, held in its decision *in re Randol and Redford* (165 USPQ 586) that

Prior patents are references only for what they clearly disclose or suggest; it is not a proper use of a patent as a reference to modify its structure to one which prior art references do not suggest.

Definitely, the references do not contain any hint or suggestion for such significant, new and unobviousness modifications.

As explained herein above the present invention also provides for the highly advantageous results which are not accomplished by the constructions disclosed in the references. It is well known that in order to support a valid rejection the art must also suggest that it would accomplish applicant's results. This was stated by the Patent Office Board of Appeals, in the case *Ex parte Tanaka, Marushima and Takahashi* (174 USPQ 38), as follows:

Claims are not rejected on the ground that it would be obvious to one of ordinary skill in the art to rewire prior art devices in order to accomplish applicants' result, since there is no suggestion in prior art that such a result could be accomplished by so modifying prior art devices.

In view of the above presented remarks and amendments, it is believed that claim 3, the broadest claim on file, should be considered as patentably distinguishing over the art and should be allowed, together with claims 4 which depends on it.

Reconsideration and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned (at 631-243-3818).

Respectfully submitted,

  
Ilya Zborovsky  
Agent for Applicant  
Reg. No. 28563

Examiner Request  
Please extend the time for response  
by 1 month and change to  
26-0085.